



HEROICRELIQS.ORG

 **Rockwell** Aerospace
Rocketdyne

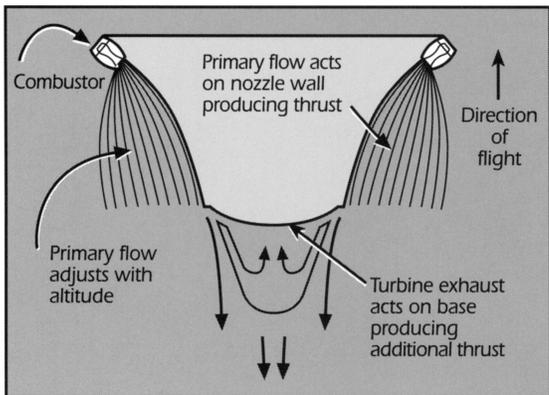
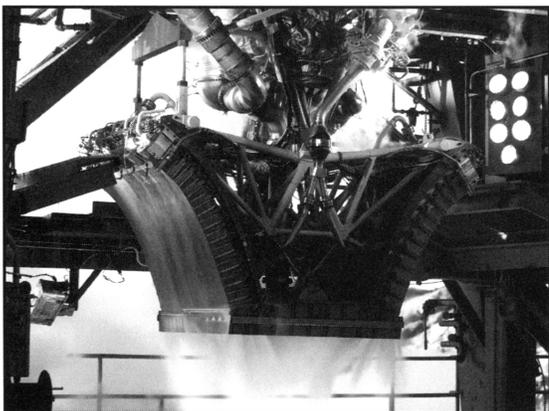
RS-2200
LINEAR AEROSPIKE ENGINE

RS-2200

Rockwell Aerospace
Rocketdyne

LINEAR AEROSPIKE ENGINE

The RS-2200 Linear Aerospike Engine is being developed for use on the Lockheed Martin Skunk Works' Reusable Launch Vehicle. The Aerospike allows the smallest, lowest cost RLV to be developed because the engine fills the base, reducing base drag, and is integral to the vehicle, reducing installed weight when compared to a bell-shaped engine. The Aerospike is the same as bell shaped rocket engines except for its nozzle, which is open to the atmosphere. The open plume compensates for decreasing atmospheric pressure as the vehicle ascends, keeping the engine's performance very high along the entire trajectory. This altitude compensating feature allows a simple, low-risk gas generator cycle to be used. Over \$500 million have been invested to date in aerospike engines, and full size linear engines have accumulated 73 tests and over 4,000 seconds of operation.



Thrust, lbf

At Sea Level 431,000
 In Vacuum 495,000

Specific Impulse, sec.

At Sea Level 347
 In Vacuum 455

Propellants Oxygen, Hydrogen

Mixture Ratio (O/H) 6.0

Chamber Pressure, psia 2,250

Cycle Gas Generator

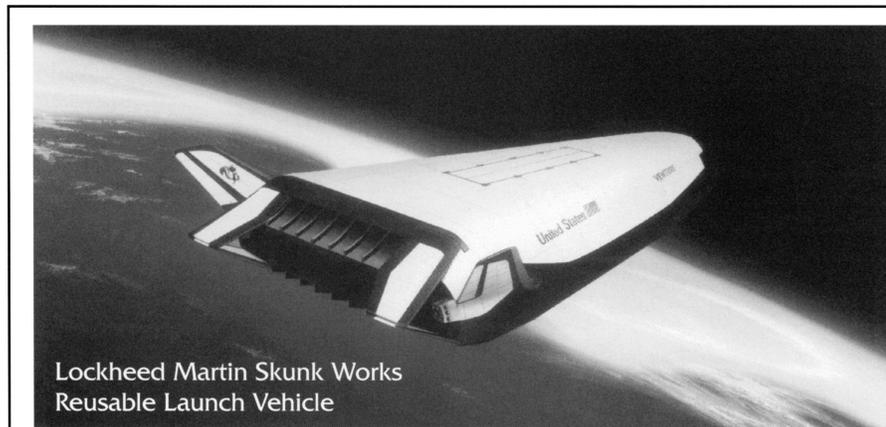
Area Ratio 173

Throttling, Percent Thrust 20-109

Dimensions, Inches

Forward End 252 wide X 93 long
 Aft End 93 wide X 93 long
 Forward to Aft 170

Pictured above left: Linear hot-fire test
 Left: Aerospike operation



AEROSPIKE BENEFITS:

- Enables smallest, lowest cost vehicle
- High installed performance
- Low-risk gas-generator cycle

For more information contact: RLV Propulsion Systems • Rocketdyne Division • Rockwell International Corporation
 6633 Canoga Avenue, P.O. Box 7922, Canoga Park, CA 91309-7922 • heroicrelics.org
 (818)586-2998